How to Cite:
Tahir, L., Sanam, S., Israr, S., Ara, J., Gul, H., & Shafi, P. (2022). C-section rates and risk factors in primigravidae following induction of labour. *International Journal of Health Sciences*, *6*(S9), 4341–4346. Retrieved from https://sciencescholar.us/journal/index.php/ijhs/article/view/13727

C-section rates and risk factors in primigravidae following induction of labour

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***Abstract*---**Background: Inducing labour is standard technique in all obstetric departments, and first-time moms are disproportionately represented among those who undergo induction yet ultimately need caesarean sections due to unsuccessful induction. Not only do complications during labour raise the risk of an emergency C-section, but so do conditions including preeclampsia, foetal distress, and gestational diabetes. The purpose of this research was to identify the rate of caesarean sections among first-time, full-term mothers who had undergone induction of labour and to identify risk variables linked with these procedures. Materials &Methods; Investigators from the Obstetrics and Gynecology department of Tartary care hospital collected data for this study from January 2022 to July 2022. Results: There were 63 total participants, all of whom were first-time moms who had been induced into labour and had presented at term. The average age of our patients was 29.62 5.65 standard deviations. Of the total number of patients, 28.5 (or 46%) had caesareans performed. The most common cause was pre eclampsia, which was detected in 15 women (24%). Conclusion: Among primigravidas who have induction

International Journal of Health Sciences ISSN 2550-6978 E-ISSN 2550-696X © 2022.
Manuscript submitted: 9 July 2022, Manuscript revised: 18 Sept 2022, Accepted for publication: 27 Oct 2022

of labour at term, preeclampsia is the most common reason that contributes to caesarean delivery, ultimately resulting in foetal distress.

***Keywords*---**C-section rates, Primigravida, labor

Introduction

Labour is the inducement of labour using pharmaceutical and/or mechanical means after 28 weeks of gestation but before to the start of natural labour in order to assure delivery through a caesarean section[1]. The existence of foetal membranes is not required for its execution. It is more likely that a first-time mother will go into labour when she tries to induce labour (49%). Two, they are more likely to need a caesarean than even multigravida[2]. Pregnancy problems include, but are not limited to: foetal compromise; chorioamnionitis; oligohydramnios; polyhydramnios; post-term pregnancies; prelabor rupture of membranes; intrauterine foetal mortality; and maternal hypertension, diabetes, and heart disease3. Inducing labour is becoming more common[3]. Each year, anywhere between 9 and 33 percent of pregnancies are impacted. Approximately 26% of births in developed nations (ranging from 4.6% in Niger to 36% in Sri Lanka and 23% in the United States) include an abortion[4]. Fourth, it is widely accepted here in the United States. No one knows for sure what proportion it makes up, although in certain schools it may approach 40%[5]. Labour induction has not been shown to be risk-free or to have only beneficial outcomes in the studies. As an added risk, it has been linked to inducing caesarean sections, infections, and even uterine rupture in certain women, as well as surgical deliveries, uterine hyperstimulation, foetal discomfort, and C-sections[6]. Induction failure might occur for a variety of maternal and foetal reasons. Risk factors for ineffective induction of labour include nulliparity (29%), low maternal height, advanced maternal age, pregestational diabetes, hypertension, gestational diabetes, and overweight or obese maternal status (BMI 25). Inducing labor8 is possible with the use of a number of different methods, including PGE2, PGE1, misoprostol, and a Foley's catheter[7]. The study's goal was to determine how often and why primigravidas who go full term after inducing labour end up having caesarean sections[8].

Materials and Methods

Performing descriptive case series research in the obstetrics and gynaecology department at Tartary Care Hospital kpk was approved by the hospital's Ethical Committee. Sample size was obtained using the World Health Organization's online tool. 63 participants were utilised as the sample size for this analysis. There was no use of a probability distribution in the selection of this sample. Pregnancies with a history of myomectomy, placenta previa, premature membrane rupture, malpresentation, or cervical dilatation greater than or equal to 4 cm at admission were excluded. Participants were scheduled, term, singleton, vertex-presenting, nonabnormally developing pregnancies with intact membranes. Each of the participating women freely provided her consent after being well informed. There was a detailed log of her personal details, last period, and

pregnancy duration. Results for body mass index were calculated. Female participants were excluded if their medical history or examination revealed that they were unable to have a vaginal delivery. All the information entered into the proforma was statistically analysed, with the major measure of success being the number of caesarean sections. The data was statistically analysed using SPSS version 23. Descriptive statistics were used to assess both qualitative and quantitative variables. In order to quantify qualitative parameters like age, metrics of central tendency and dispersion were used. Preeclampsia, BMI, gestational diabetes, oligohydramnios, and caesarean section were among the quantitative parameters that were measured using Incidence and percentages. Factors including age, diabetes mellitus, hypertension, and body mass index may have affected our results in unexpected ways, but because to stratification, we were able to control for them. Following stratification, a Chi-Square test was utilised. The p-value has to be less than 0.05 to be considered statistically significant.

Results

Sixty-three first-time mothers who had their labours induced at full term were included in the study. The median ages of our patients were The average age of the patients was 29.62 5.65 years. Twenty-eight and a half patients, or 46 percent, had caesarean sections. Pre eclampsia was the primary cause of preterm delivery in 15 women (24%). between the ages of 18 and 42 Patients were divided into three groups based on age. Most primigravidae who gave birth at a very young age (23 to 38) belonged to this age bracket. Patients' ages ranged from 2 to 83, with 23 (37%) being under the age of 23, 51 (51%) being 24-38, and 8 (13%) being 39 or older. (Table 1).

Table 1: The Age-Wise Patient Population

	Incidence	Percent	Mean +SD
20.00-22.00	23	37	
26.00-38.00	33	51	
			23.60+6.48
36.00-48.00	07	12	
Total	63	100.0	

Table 2: Causes of caesarean section after inducing labour

		Count	%
Caesarean Section	Yes	28	45.6%
	No	34	54.4%
Pre-eclampsia	Yes	15	23.2%
	No	46	76.8%
Gestational Diabetes Mellitus	Yes	10	14.4%
	No	53	85.6%
Obesity	Yes	9	13.6%
	No	52	86.4%
Oligohydramnios	Yes	10	16.0%

	No	51	84.0%
Polyhydramnios	Yes	7	12.0%
	No	15	88.0%

Table 3: Statistics on the Age of First Caesarean Delivery

		Caesarean Section		Total	p-value
		Yes	No		
Age (inyears)	22.00-28.00	11 48%	12 52%	23 100.0%	0.845
	24.00-38.00	14 45%	17 56%	31 100.0%	
	38.00-48.00	3 44%	4 55%	07 100.0%	
Total		32 47%	31 26%	63 100.0%	

Thirty-two people (or 45.6%) were found to have had a caesarean section. The most common cause was preeclampsia, which was discovered in 14 (23%), followed by oligohydramnios (10/16%), gestational diabetes (10/14.4%), and obesity (09/13.6%). (Table 2). The similarity in C-section rates across age groups suggests that the same clinical factors are at play in all of them. Patients under the age of 20 have a caesarean section at a rate of 48%, those between the ages of 20 and 38 at a rate of 44%, and those older than 38 at a rate of 44%. (Table 3) The stratification of the caesarean section by those factors revealed the relative significance of each factor. (Table 4) However, even after accounting for age differences, the results are not statistically significant.

Table No. 4: Distribution of caesarean sections by factor

		Caesarean Section		p-value
		Yes	No	
Pre-eclampsia	Yes	13	4	0.000
		84%	16%	
	No	16	32	
		32%	33%	
Obesity	Yes	7	3	0.001
		82%	17.6%	
	No	11	33	
		38%	60%	
Oligohydramnios	Yes	9	3	0.000
		85%	15.0%	
	No	10	33	
		38%	61%	
Polyhydramnios	Yes	04	2	0.000
		56%	6%	
	No	10	35	
		35%	65%	100%

Discussion

Labor induction is a standard practise in all obstetric units. Multiple medications are available for use by obstetricians to initiate labor[9]. There has been a significant trend in the past two decades toward more safer methods and indications for inducing labour. It is helpful for both mothers and obstetricians to classify the causes of induction of labour as either maternal, foetal, or elective. The induction rate may be anything from 6% and 23%, depending on population characteristics and availability to medical treatment[10]. The incidence of caesarean sections after inducement of labour varies widely between 10 and 85%, according to research conducted in both industrialised and developing nations[11]. More private hospitals than public hospitals have CSR rates over the 15% threshold set by the World Health Organization. A number of factors contribute to the high rate of caesarean sections after spontaneous vaginal births, including lack of experience with assisted vaginal breech birth, reluctance to litigate, health insurance rules, c-sections on demand, untrained midwives, inadequate implementation of active management of labour, and variations in professional practice12. Consistent with these results, D. J[12]. Rouse observed that the caesarean delivery rate climbed to 62% after initiating labour and monitoring the pregnant women for 10 hours during the early stages of labour[13]. 16 The most prevalent reasons for unsuccessful induction were labour arrest, foetal distress, cephalopelvic disproportion, and an unsettling CTG[14]. The most common reasons for caesarean sections in 2013 were advanced maternal age (status gravida), excessive use of inducing agents, and a low Bishop score prior to induction. Inadequate foetal development, a low Bishop score just before induction, and a prolonged latent stage of labour were also highlighted by the N B khan as major factors of induction failure, consistent with our results. Instead of oxytocin, misoprostol is the medicine of choice for inducing labour since it improves the chances of a successful vaginal birth[15]. The causes of foetal pain extend well beyond.

Approximately 15% of all inductions are unsuccessful. One study found that foetal discomfort was the primary reason for caesarean sections. Fetal distress was suggested by both the CTG pattern and the meconium-stained liquor. 19 The increased caesarean section rate seen in this study was also strongly influenced by pre-eclampsia and gestational diabetes. The early impairment of the foetus and the increased risk of cerebral oedema and coagulopathy in the mother as a result of severe hypertension generated by pregnancy and intrauterine growth restriction is the ultimate justification. It is vital to maintain a watchful check on the woman and baby during the induction procedure to minimise any possible difficulties, since c-sections have 8-fold higher mortality rates and 12-fold greater illness rates compared to vaginal births[16].

Conclusion

Inducing labour at term is associated with an increased risk of preeclampsia, which is the major cause of caesarean delivery and subsequent foetal discomfort in primigravidas. These findings stress the need of having conclusive evidence before determining whether or not to induce labour in women who have passed their due dates.

References

1. Darney BG, Snowden JM, Cheng YW, Jacob L, Nicholsan JM, Kaimal A, et al. Elective induction of labor at term compared with expectant management. Obstet gynecol. 2013;122:761-9.
2. Moore J, Low LK. Factors that influence the practice of elective induction of labor.J Perinat Neonatal Nurs.2012;26:242-50.
3. Levine LD, Hirshberg A, Srinivas SK.Term induction of labor and risk of cesarean delivery by parity. J Matern fetal neonatal Med. 2014;27:1232-6.
4. Gulmezoglu AM, Crowther CA, Middleton P, Heatley E. Induction of labor for improving birth outcomes for women at or beyond term.Cochrane Database Syst Rev. 2012;6:CD004945.
5. Chaubey S, Kanti Y, Sandhya K, Meenakshi S, Ajay S, Shikha M. Maternal & fetal outcome after induction and expectant management of labor in primigravida and multigravida.IJIR. 2016;2:2454-62. Rayamajhi RT, Karki C, Shrestha N, Padhye SM, Indication for labour induction and predictors for failed induction at KMCTH. Kathmandu Univ Med J (KUMJ) 2009 Jan-Mar;7(25):21-5.
6. Baños N, Migliorelli F, Posadas E, Ferreri J, Palacio M, Definition of Failed Induction of Labor and Its Predictive Factors: Two Unsolved Issues of an Everyday Clinical Situation.
7. Talaulikar VS, Arulkumaran S, Failed induction of labor:Strategies to improve the success rates, Obstet Gynecol Surv.2011;66:717-28.
8. Tenore JL. Methods for cervical ripening and induction of labor. Ame Family Physician. 2003;67(1):2123–8.
9. Kelly Winder,Induce Labour With Natural Methods – Bring On Labour Naturally, Belly Belly Creator, Mum & Birth Attendant http://www.bellybelly.com.au/birth/naturalinduction
10. Rouse DJ, Owen J, Hauth J, Criteria for failed labor induction: Prospective evaluation of a standardizedprotocol, Obstet Gynecol. 2009;96:671–7.
11. Khan NB, Ahmed I, Malik A, Factors associated with failed induction of labour in a secondary care hospital,Med Assoc.,2012 Jan;62(1):6-10.
12. Sanchez-Ramos L, Gaudier FL, Kaunitz AM. Cervicalripening and labor induction after previous Caesarean delivery. Clin Obstet Gynecol. 2000;43:513-23.
13. Tang CH, Wang HI. Risk-adjusted Cesarean Section rate for the assessment of physician performance in Taiwan: a population based study. BMC Public Health. 2006;6:246.
14. Chanthasenanont A, Pongrojpaw D. Indications for Cesarean Section at Thammasat University Hospital. JMed Assoc Thai. 2007;90:1733-7.
15. Brindley BA, Sokol RJ. Induction and augmentation of Labour. Basis and methods for current practice.Obstet Gynecol Surv. 1988;43:730.
16. Induce Labour With Natural Methods – Bring On Labour Naturally, Belly Belly Creator, Mum & Birth Attendant http://www.bellybelly.com.au/birth/naturalinduction Obstet Gynecol. 2009;96:671–8